

### REMARKS

The present Reply is being filed together with a Petition for Extension of Time, a Request for Continued Examination, and an Information Disclosure Statement.

In view of the above, claims 14-21 and 28-32 are pending. Claim 14 is the only independent claim. Claims 28-32 are new. Support for the new claims can be found, for example, in Figure 6 and the corresponding text in the specification. The specification has been amended to make the reference numerals used in the paragraph at page 8, line 11 of the application consistent with those used in Figure 3.

Claims 14-21 stand rejected as allegedly obvious over the prior art identified in Figure 7 in Applicants' application (hereinafter "AAPA") in view of US Patent No. 4,636,647 (hereinafter "Nishizawa"). The action concedes that AAPA "does not explicitly describe the connection [between the photodiode metallization and the submount metallization] as a eutectic mixture connection." (Action at paragraph 2.) However, the action alleges that connecting the components with the eutectic mixture is obvious, and points, for example, to the eutectic mixture disclosed in column 3 of Nishizawa. We traverse.

First, with regard to the action's reference to a "flip-chip type connection" in AAPA, we submit that there is nothing in the AAPA that indicates that a flip-chip type connection implies or suggests to a person of ordinary skill in the art that wafers be mounted to one another using a eutectic mixture. To the contrary, "flip-chip" mounting simply refers to turning one wafer upside down prior to fixing that wafer to another wafer. Accordingly, we submit that there is no motivation or reason for a person of ordinary skill in the art to look to the eutectic mixture disclosed in Nishizawa for connecting the metallizations of the photodiode and submount from AAPA to one another.

Second, even if a person of ordinary skill in the art were to use the eutectic mixture disclosed in Nishizawa to connect the metallizations of the photodiode and submount from AAPA to one another, the resulting combination would still fail to disclose all of the limitations of claim 14. Specifically, the resulting combination would not teach or suggest "the first metallization and the second metallization defining a eutectic mixture, and the photodiode and

the submount [being] ... directly bonded to one another by the eutectic mixture," as recited in claim 14 as currently amended.

To the contrary, Nishizawa teaches that an *additional* material comprising the eutectic mixture (e.g., solder) be used to bond the metallizations of the components. Specifically, Nishizawa states:

As shown in FIG. 8, photodiode 59 is die-bonded to the pad 51 by use of ring solder such as AuSn eutectic mixture... (3:58-59)

In contrast, claim 14 requires that the respective metallizations of the photodiode and the submount themselves define the eutectic mixture and directly bond to one another as a result. Accordingly, we ask the Examiner to withdraw the rejection.

In view of the above, we ask the Examiner to allow the application. To the extent the Examiner disagrees, we invite the Examiner to contact the undersigned by telephone to discuss the case.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which Applicants have: (a) addressed certain comments of the Examiner does not mean that Applicants concede other comments of the Examiner; (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims; or (c) amended or canceled a claim does not mean that Applicants concede any of the Examiner's positions with respect to that claim or other claims.

Applicant : Robert Furst et al.  
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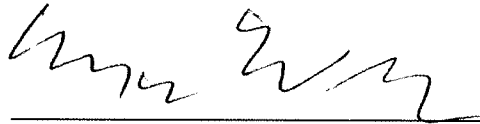
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Respectfully submitted,



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